AMENDMENTS TO THE CLAIMS

     This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

    1.   (currently amended): An image judging apparatus, comprising:

    a candidate region extracting means for extracting candidate regions for predetermined

patterns from medical image data;

    an inner/outer outline image extracting means for extracting inner/outer outline images

corresponding to an inner/outer outline region, which are in the vicinity of the outline of the

candidate regions extracted by the candidate region extracting means; ~~and~~

    a pattern judging means for judging the type of pattern within the candidate regions, by

employing characteristic amounts of the inner/outer outline image extracted by the inner/outer

outline image extracting means;

    <u>a density pattern extracting means, for extracting density patterns, which are present</u>

<u>within unit pixel groups that constitute the inner/outer outline images, extracted by the</u>

<u>inner/outer outline image extracting means;</u>

    <u>a presence frequency calculating means, for judging which of the density patterns the unit</u>

<u>pixel groups of the inner/outer outline images are similar to, and calculating presence frequencies</u>

<u>by counting the presence of the similar density patterns within the inner/outer outline image; and</u>

    <u>a classifying means, for classifying the inner/outer outline images according to the type</u>

<u>of pattern, based on the presence frequencies of the density patterns; wherein</u>

    <u>the pattern judging means judges to which classification the candidate region belongs,</u>

<u>from among the classifications of the inner/outer outline images, which were classified according</u>

to the type of pattern by the classifying means, by employing the presence frequencies of the

density patterns therein, derived by the presence frequency calculating means, as characteristic

amounts; and

~~wherein~~ the inner/outer outline region includes the entire outline of the candidate regions.

2.   (original): An image judging apparatus as defined in claim 1, wherein the type of

pattern is one of a normal pattern, an abnormal pattern, a benign abnormal pattern, and a

malignant abnormal pattern.

3.   (previously presented):   An image judging apparatus as defined in claim 1,

wherein the type of pattern is classified according to a sign.

4.   (canceled).

5.   (original): An image judging apparatus as defined in claim 1, wherein:

the inner/outer outline image extracting means divides the inner/outer outline image into

two or more regions comprising an outline edge, an outline interior and an outline exterior; and

the pattern judging means judges the type of pattern based on the characteristic amount of

at least one of the regions.

6.   (canceled).

7.   (currently amended): A method for judging images, comprising the steps of:

extracting candidate regions of specific patterns from medical image data;

extracting inner/outer outline images corresponding to an inner/outer outline region, which are in the vicinity of the outline of the extracted candidate regions; and

judging the type of pattern within the candidate regions, by employing characteristic amounts of the extracted inner/outer outline image;

wherein the inner/outer outline region includes the entire outline of the candidate regions, and

the type of pattern within the candidate regions is classified by determining density patterns within each of small regions that constitute the inner/outer outline images, and obtaining the frequencies at which the density patterns appear within all of the small regions of the inner/outer outline images.

8.   (canceled).

9.   (currently amended): A computer readable medium having recorded therein a program that causes a computer to execute a method for judging images, comprising the procedures of:

extracting candidate regions of specific patterns from medical image data;

extracting inner/outer outline images corresponding to an inner/outer outline region, which are in the vicinity of the outline of the extracted candidate regions; and

judging the type of pattern within the candidate regions, by employing characteristic amounts of the extracted inner/outer outline image;

wherein the inner/outer outline region includes the entire outline of the candidate regions, and

the type of pattern within the candidate regions is classified by determining density patterns within each of small regions that constitute the inner/outer outline images, and obtaining the frequencies at which the density patterns appear within all of the small regions of the inner/outer outline images.

10.   (previously presented): The apparatus as defined in claim 1, wherein the inner/outer outline region includes inward vicinity and outward vicinity of the outline of the candidate regions.

11.   (previously presented): The apparatus as defined in claim 1, wherein the inner/outer outline region is within a range from edge of the outline of the candidate regions.

12.   (previously presented): The method as defined in claim 7, wherein the inner/outer outline region includes inward vicinity and outward vicinity of the outline of the candidate regions.

13.   (previously presented): The method as defined in claim 7, wherein the inner/outer outline region is within a range from edge of the outline of the candidate regions.

14.   (previously presented): The computer readable medium as defined in claim 9, wherein the inner/outer outline region includes inward vicinity and outward vicinity of the outline of the candidate regions.

15.   (previously presented): The computer readable medium as defined in claim 9, wherein the inner/outer outline region is within a range from edge of the outline of the candidate regions.

16.   (previously presented): The apparatus as defined in claim 1, wherein the inner/outer outline images are divided into outline edge regions, outline interior regions, and outline exterior regions.

17.   (previously presented): The method as defined in claim 7, wherein the inner/outer outline images are divided into outline edge regions, outline interior regions, and outline exterior regions.

18.   (previously presented): The computer readable medium as defined in claim 9, wherein the inner/outer outline images are divided into outline edge regions, outline interior regions, and outline exterior regions.

19.   (previously presented): An image judging apparatus as defined in claim 1, wherein the type of pattern is only an abnormal pattern.

20.   (previously presented): An image judging apparatus as defined in claim 19, wherein an abnormal pattern is characterized that it represents symptoms of at least one of tumors, tumorous boils, and cancer.

21.   (currently amended): An image judging apparatus as defined in claim 10, wherein edges of said inner/[[outline]]outer outline region are within a predetermined distance from the edge of the outline of the candidate regions.

22.   (previously presented): The apparatus as defined in claim 5, wherein the outline edge region is a region which straddles the outline of the candidate regions, outline interior region is a region between the inner edge of the inner/outer region and the outline of the candidate regions, and the outline exterior region is a region between the outer edge of the inner/outer region and the outline of the candidate regions.

23.   (previously presented): The apparatus as defined in claim 1, wherein the type of pattern within the candidate regions is classified by: determining density patterns within each of small regions that constitute the inner and outer outline images, and obtaining the frequencies at which the density patterns appear within all of the small regions of the inner and outer outline images.

24.   (canceled).

25.   (canceled).